

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**TRADEMARK SECTION**

In re Application of:	)	Mark: Angled Tooth Drum
	)	
	)	July 30, 2007
DIAMOND Z MANUFACTURING, INC.	)	
	)	
Serial No.: 10/846,371	)	Examining Attorney:
	)	Jason Y. Pahng
Filed: 05/14/2004	)	
	)	Law Office 104
	)	

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**DECLARATION**

I, Carl Bonner, do hereby declare that:

1. That I am the research and development coordinator at Diamond Z Manufacturing. I have been involved in designing grinder machines for approximately fourteen years. In this role I am in charge of designing most of the systems of new grinding machines for Diamond Z Manufacturing.

2. The Applicant, Diamond Z Manufacturing was formed in 1988 and began manufacturing grinders in late 1989. Prior to the formation of Diamond Z Manufacturers, the founders worked in a self-employed capacity in the grinding business, and built their own grinding machines for use in that business. I have worked in various roles with heavy machinery for approximately 34 years. During this time I have gained skills in all phases of the technologies involved in building grinding machines, such as those built by Diamond Z Manufacturing. My skills include welding, hydraulics machining, fabricating, and designing. In my position as

research and development coordinator for Diamond Z Manufacturing, I am familiar with many if not all commercial grinders that are on the market including those of our competitors. These include tub grinders, horizontal grinders, grinders for wood, grinders for animal feed, and grinders for construction debris.

4. In the field of horizontal grinders it was found that the grinder we designed for Diamond Z was designed to be different from the prior art in that the feed roller would be more powerful than the typical feed roller, and the hammermill itself would be much more powerful than the typical horizontal grinder hammermill. Part of this more powerful and more productive horizontal hammermill included an improved design of the feed roller. In designing the feed roller for this powerful hammermill we found a design which solves several problems that the prior art design of the feed rollers did not address. One was a pattern of gripper teeth which would cause agitations of the material being fed, and which would move it towards the center of the hammermill. This solved the problem of wood being forced straight forward and some of it being pressed between the tips of the hammers and into the drum of the hammermill itself.

5. Another problem that was reported to us by customers when using a horizontal grinder was a problem that is solved by the feed roller of the invention. That problem is that as the roller of a typical horizontal hammermill rotates there were certain regions on the feed roller that would not present teeth below the feed roller with which to grip material being fed. This is because prior to our design of feed roller the rows of teeth on the feed rollers of horizontal hammermills went straight across the roller. Thus for certain angles during the rotation of the prior art feed rollers, the feed roller itself is pressing down on the material being fed, with the surface of the cylinder of the feed roller instead of with teeth attached to the cylinder. This not

only allows material to be driven back from the blows of the hammermills, but also causes vibration of the feed roller as it bounces up and down between toothed regions and non-toothed regions. With the design of the current invention there is no point in the three hundred and sixty degrees on the feed roller (when looking at a side view of it) where at least some of the gripper teeth are in contact with the material directly under the feed roller. This is in contrast to the prior art. With the feed roller of the invention, there are at least some teeth in contact with the material being fed during the entire three hundred and sixty degree rotation of the feed roller. This reduces vibration, provides a more secure grip, prevents material from being driven back, and also provides a mechanism to agitate and center material being fed by the feed roller. This design has worked well with the improved power of the Diamond Z horizontal grinder, and made this machine a successful product for the company.

6. One of our major competitors in this field is Peterson Pacific, and since the introduction of our angle to feed roller, Peterson Pacific has come out with angle tooth and chevron shaped patterns of gripper teeth on their horizontal grinders, and we feel that is a direct result of the copying of our feed roller design, and is a strong indication of the benefits of this pattern of gripper teeth. Peterson Pacific made horizontal hammermills long before Diamond Z came out with this pattern of gripper teeth.

7. I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application

and any registration resulting therefrom.

DATED: 7/9/07

Carl Bonner

Carl Bonner  
research and Development Coordinator  
DIAMOND Z MANUFACTURING, INC.